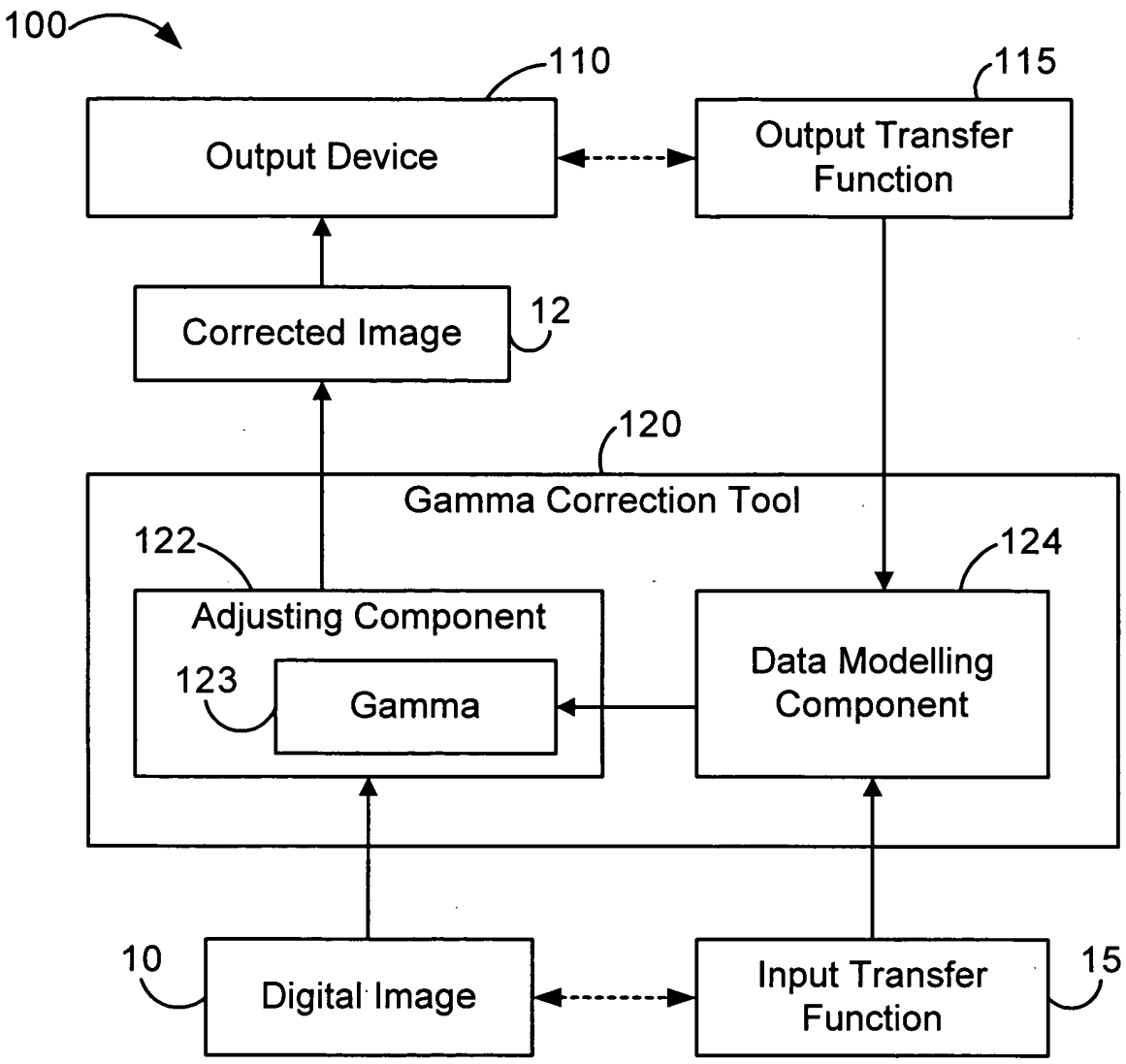
100
110
Output Device
115
Output Transfer Function
Corrected Image
12
120
Gamma Correction Tool
122
Adjusting Component
123
Gamma
124
Data Modelling Component
10
Digital Image
Input Transfer Function
15

FIG. 1A

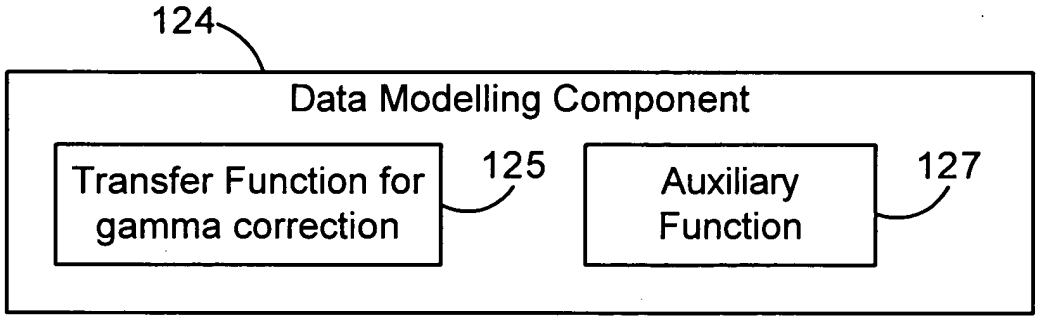
124
Data Modelling Component
Transfer Function for gamma correction
125
Auxiliary Function
127

FIG. 1B

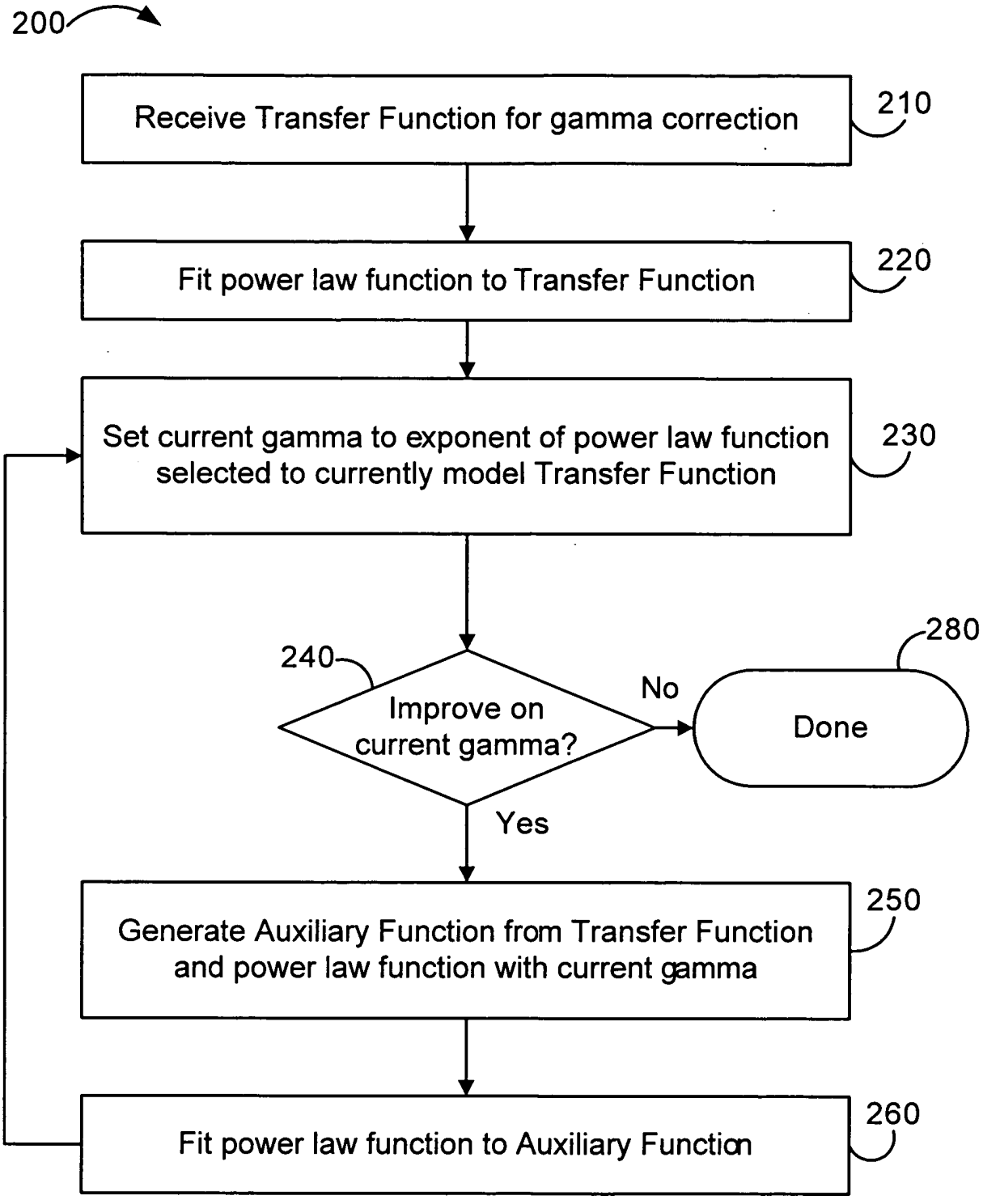
200
Receive Transfer Function for gamma correction
210
Fit power law function to Transfer Function
220
Set current gamma to exponent of power law function selected to currently model Transfer Function
230
240
Improve on current gamma?
No
280
Done
Yes
Generate Auxiliary Function from Transfer Function and power law function with current gamma
250
Fit power law function to Auxiliary Function
260

FIG. 2

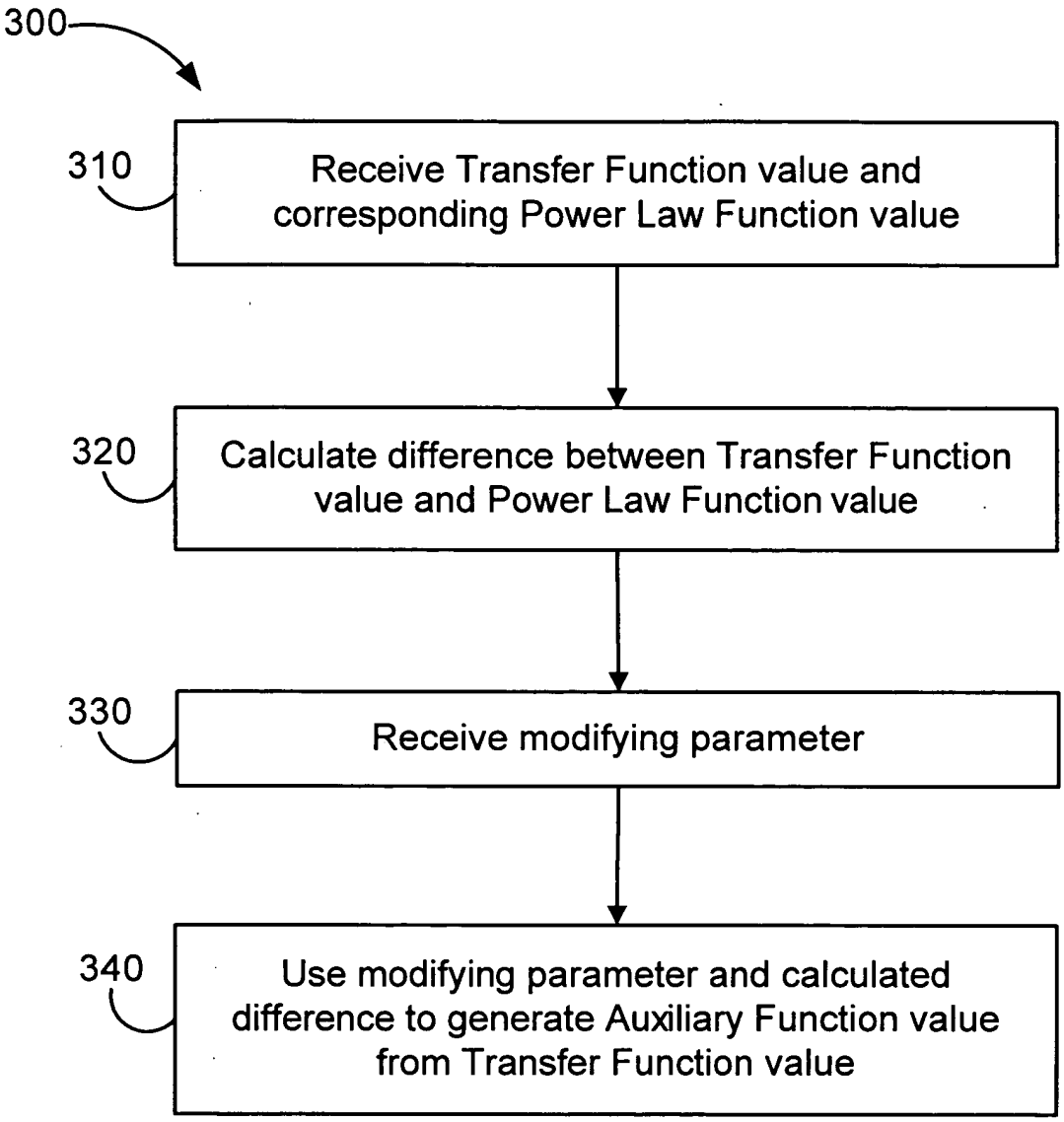
300
310
Receive Transfer Function value and corresponding Power Law Function value
320
Calculate difference between Transfer Function value and Power Law Function value
330
Receive modifying parameter
340
Use modifying parameter and calculated difference to generate Auxiliary Function value from Transfer Function value

FIG. 3

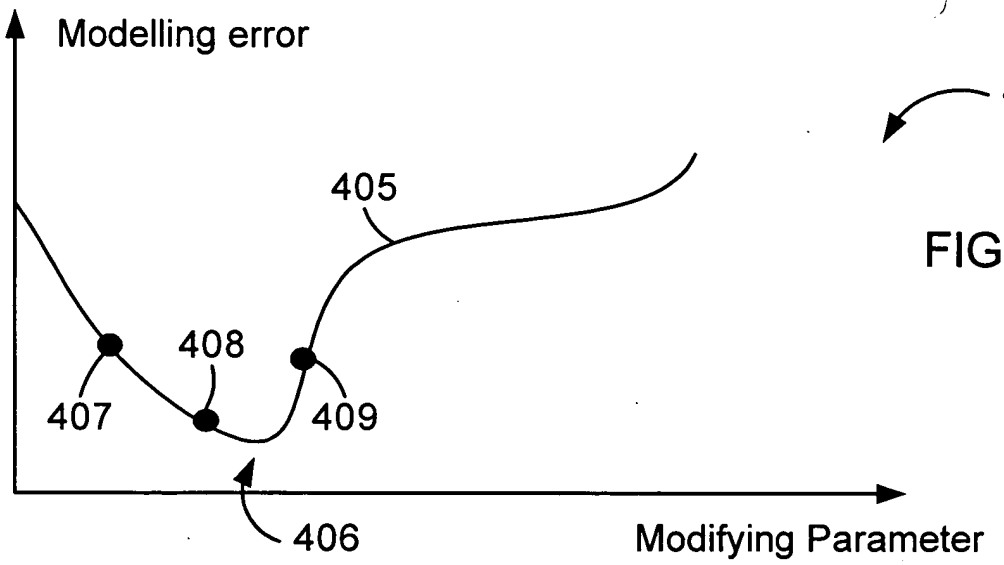
Modelling error
400
405
408
407
409
406
Modifying Parameter

FIG. 4A

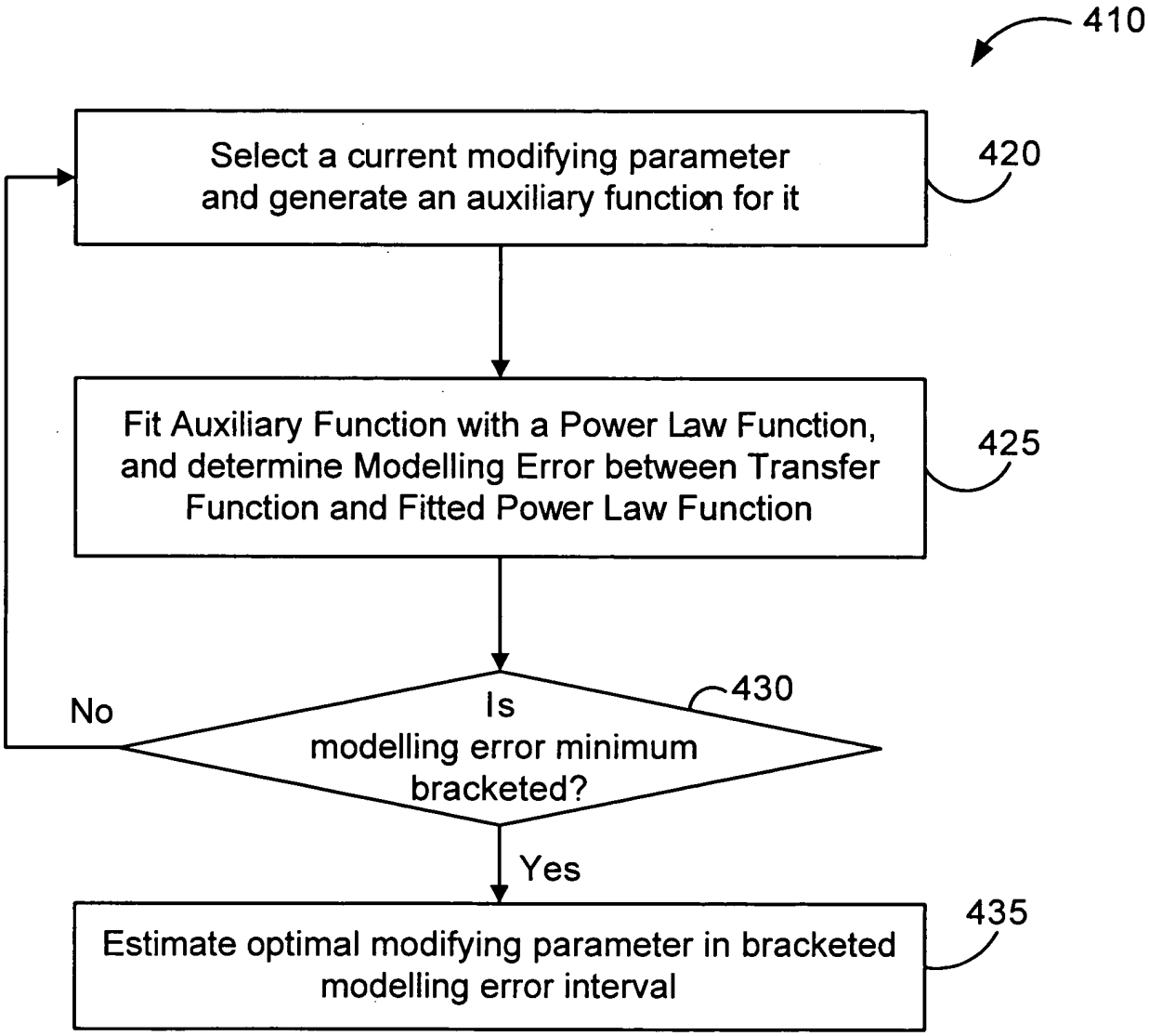
410
Select a current modifying parameter and generate an auxiliary function for it
420
Fit Auxiliary Function with a Power Law Function, and determine Modelling Error between Transfer Function and Fitted Power Law Function
425
Is modelling error minimum bracketed?
430
No
Yes
Estimate optimal modifying parameter in bracketed modelling error interval
435

FIG. 4B

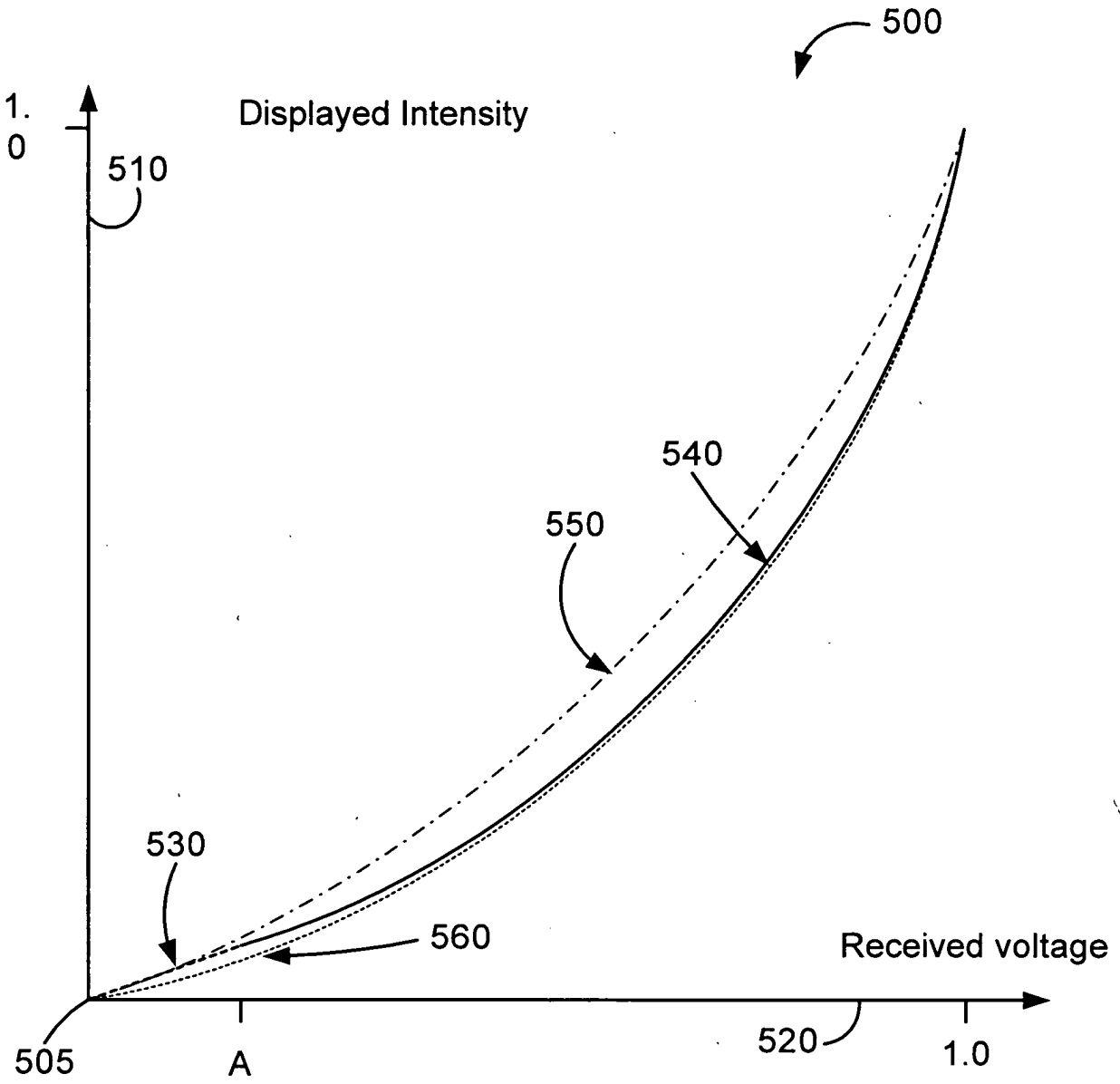
500
1.
0
Displayed Intensity
510
540
550
530
560
Received voltage
505
A
520
1.0

FIG. 5